

Syncro: Universal Reverse-Auction Marketplace

Software Requirement Specification

Team CodeBuds

E/22/052, E/22/419, E/22/058, E/22/121

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1. Purpose of the Project

The purpose of Syncro is to solve the "Discovery Gap". It helps buyers with a fixed budget find the right talent quickly. Instead of searching manually, buyers post what they need, and sellers bid for the work. This creates a fast and fair marketplace for everyone.

2. Scope of Work

For Semester 3, we are building the core foundation. This includes user profiles, a dual-role toggle, a real-time chat for negotiation, and basic order management. Advanced features like an automated bidding engine and an AI Consultant are planned for Semester 4 and are currently out-of-scope

3. User Roles

- **The Buyer:** Someone who needs a specific item, like a **custom cake**, and has a **fixed budget**.
- **The Seller:** A person who has skills, like **making cakes**, and needs to find customers quickly.
- **The Dual-User:** A special feature of Syncro where one account can switch between being a buyer and a seller instantly.

4. Main Features

- **Guided Request Posting:** A chatbot helps the buyer write down exactly what they need so there are no mistakes.
- **The Bidding Engine:** This is the core logic that lets sellers see a request and send a "bid" (a price offer) to the buyer.
- **Real-Time Negotiation:** A chat window where the buyer and seller can talk instantly to fix the final price.
- **Instant Notifications:** Using **Web Sockets**, the system sends an alert to your phone the second a new bid arrives.

5. Functional Requirements

- **Dual-Role Management:** The system must provide a toggle that lets one account switch between being a Buyer and a Seller.
- **Bidding System:** The platform must allow buyers to post their needs and set a budget so that sellers can submit competitive price bids.
- **Guided Request Posting:** The system must include a chatbot to guide buyers through the process of writing their requests clearly.
- **Real-Time Negotiation:** The app must provide a live chat window where buyers and sellers can talk and agree on a final price instantly.
- **Search and Discovery:** Users must be able to search for specific services or products within the marketplace.

6. Non-Functional Requirements

- **Security (JWT):** The system must protect user data and accounts using **JWT** (JSON Web Tokens) to ensure only authorized users can access the platform.
- **High Performance:** The bidding and chat systems must have "low-latency," meaning updates happen instantly without waiting for the page to refresh.
- **Reliability:** All critical data, such as user profiles and bid history, must be stored safely in a **PostgreSQL** database.
- **User-Friendly Interface:** The design must be simple and easy to navigate, with a dashboard that looks good on both computers and mobile phones.
- **Scalability:** The system architecture must allow for more users and data to be added in the future without slowing down.